

NEW NEUROPTEROID INSECTS FROM THE ANTILLES

BY NATHAN BANKS

In 1938 Dr. P. J. Darlington collected in various parts of Santo Domingo and Puerto Rico, and among his large collections are a number of Neuropteroid insects. Mr. C. T. Parsons in 1939 collected in Cuba and gathered a number of these insects. In the Museum collection are various specimens from earlier collections of Darlington, Bates, and others that had not been studied. From this material I have described about twenty-five new species. Particularly interesting are the two new genera of Trichoptera. Several forms of Psocidae were rather surprising; *Psylloneura*, one old and one new species, hitherto known from Pacific Islands, *Graphocaecilius* previously known from Peru; *Hemipsocus roseus* gradually being distributed through the Tropics, but most common in the Orient. In the collections of the Museum there are now from the Antilles 32 species of Corrodentia, 82 species of true Neuroptera, and 36 Trichoptera, 150 in all. Aside from these about six other species have been recorded from the area.

A large part of these species are not found elsewhere; a few species occur in southern Florida, a few others in Texas or Central America; fewer occur also in northern South America. A great many of the genera are, however, South American, and in large genera which occur widely, some, often many, of the species belong to sections that are most numerous in South America. One of the most remarkable facts in the absence of Perlidae, although species of *Neoperla* and related forms are common in Central and South America.

PSOCIDAE

Psocus annellus sp. nov. (Fig. 24.)

Head yellowish brown, no stripes on nasus; antennae brown; mesonotum with the lateral lobes and a smaller lobe in middle of front, black; abdomen brown; legs pale.

Wings hyaline; fore wings with a large dark spot occupying most of apical part of stigma, a minute black spot before base of stigma, and a small mark at end of anal vein; veins brown, basal half of lower side of stigma, forking of radial sector, a stretch of radial sector beyond the separation, and most of lower side of cell, white. In hind wings no marks, veins dark. In fore wings the cell is twice as broad above as below, the fork of radial sector scarcely longer than the stem; stigma rather long and rounded behind, outer margin convex.

Length of fore wing 3.6 mm.

One from Whitfield Hall, Blue Mts., Jamaica, 13 to 20 August, near 4,500 ft. (Darlington). Type M. C. Z. 25276.

***Psocus cyllarus* sp. nov. (Figs. 8, 11.)**

Head pale, with many dark marks, a median and two submedian lines on vertex, uniting just above ocelli, below ocelli splitting into two stripes to the nasus, latter plainly striped, each side on vertex are three dark areas, lower one curved, two small marks by inner orbits, and a fainter pointed streak each side from the anterior ocellus; antennae pale on basal part, dark beyond; mesonotum nearly black, a narrow median line, forked in front and the lateral and hind borders narrowly white, metanotum with pale median spot and line; abdomen dark, mottled with white; legs pale, tarsi darker.

Wings hyaline; fore wings with many dark marks; a distinct, rather oblique band before middle, sometimes only outlined in part; one or two small spots in each apical cell, tips of veins dark, a larger spot back of forking of the radial sector, and the stigma dark on apical two thirds, and a border below; veins mostly dark, forking of radial sector, lower part of outer side of cell, lower corner of cell and the cross-vein to margin white. Hind wings nearly clear, the veins brown.

In the fore wing the stigma is angled behind, the basal part concave, the outer part convex; fork of radial sector very much longer than the stem; the discal cell has the opposite sides equal; the medius and radial sector united at one point only or connected by a short cross-vein.

Length of fore wings 4.5 mm.

Several from Loma Rucilla, Santo Domingo, June, 5 to 10,000 ft. (Darlington). Type M. C. Z. 25275.

Psocus oneitus sp. nov. (Fig. 10.)

Head with the ocelli on a black spot, a median black stripe extends back on vertex, leaving pale each side, each side of anterior ocellus is a rounded pale spot. Eyes of male of rather more than diameter apart; hairs on antennae of moderate length. Mesonotum brown, with the usual yellow Y-mark; legs yellowish. Fore wings brownish on basal half, outer part, obliquely across discal cell dark, fading out basally; a dark streak from end of anal vein basad; stigma (except white base) brown, and a brown streak along basal part of hind border. The veins brown; forking of radial sector, lower outer side of discal cell, the lower side and the cross-vein to margin snow-white. Hind wings unmarked, with dark veins. Fore wings moderately large; stigma broad at the sharp hind angle, outer side convex; forking of radial sector basally much rounded, the fork much longer than the stem; discal cell with parallel sides, and opposite sides subequal, the lower basal corner slightly bent down; radial sector and medius unite only at one point. In hind wings the fork of radial sector no longer than stem.

Length fore wing 4 mm.

One from Valle Nuevo, southeast of Constanza, Santo Domingo, August, 7,000 ft. (Darlington). Type M. C. Z. 25277.

Copostima laconia sp. nov. (Fig. 21.)

Head reddish brown; nasus faintly lineate with dark; mesonotum dark brown; legs pale. Fore wings nearly uniform dark brown throughout, only near the middle near base of discal cell, above and before it are some small pale spots; a black point before base of stigma; veins dark, the base of stigma, the appendix to stigma the short union of radial sector and medius the forking of radial sector, longer on lower branch, the lower part of outer side of discal cell, and the tip of the cubitus to margin are white; hind wings gray.

In fore wings the outer and inner sides of the discal cell about parallel; the fork of radial sector very much longer than the stem; the stigma comes to an angle at appendix, before it the lower side is concave, the outer side convex. In hind wings the fork of the radial sector is nearly as long as the stem, and the upper branch of the medius separates only a little beyond the union and its apical part.

Length of fore wings 3 mm.

One from Valle Nuevo, southeast of Constanza, Santo Domingo, August, 7,000 ft. (Darlington). Type M. C. Z. no. 25278.

Myopsocus taurus n. sp. (Fig. 9.)

Head almost wholly dull black, a few pale elongate spots each side on vertex, and between ocelli and eyes; antennae brown, pale on extrema base; mesonotum mostly dark, lateral margins pale; legs pale, femora and tibia more or less marked with dark. Fore wings very heavily mottled with dark, almost black, a solid black band from before stigma obliquely out toward the outer hind margin, the stigma and an almost equal space behind it cream white, anterior edge of stigma with six or eight brown dots; outer margin of wing with five white spots, one between each pair of veins, and another one near lower angle of cell. Hind wings faintly gray, tips of fork of radial sector with dark spot.

Fore wings are very broad beyond the cell; the area of the first anal vein near base is elevated in a great almost angulate carina, each spreading outward a bit; between this and the end of the cell there are two undulations on the hind margin. The stigma is long, but broad and angled behind toward the tip; the longer fork of the radial sector is about twice as long as the stem; the discal cell is much longer than broad, narrowed behind, the outer side is concave and joins the radial sector beyond the union with medius. In the hind wings the medius and radial sector are united for a short distance.

Length of fore wing 4.3 mm.

One from Loma Vieja, south of Constanza, Santo Domingo, August, 6,000 ft. (Darlington). Type M. C. Z. 25279.

CAECILIUS

SYNOPSIS OF SPECIES

- | | |
|---|--------------------|
| 1—Fore wings with dark marks or spots. | 2 |
| Fore wings unmarked. | 5 |
| 2—With a small dark spot in each apical cell and other small spots elsewhere. | <i>dardanus</i> |
| Posterior apical cells largely dark. | 3 |
| 3—No dark in fork of radial sector. | <i>alcinus</i> |
| Fork of radial sector partly or wholly dark. | 4 |
| 4—Marks on basal half of wing much darker than those on apical part; posterior cells not wholly dark. | <i>caligonus</i> |
| Marks on basal half of wing no darker than the others. | <i>jamaicensis</i> |
| 5—Areola postica very low and short, not reaching one half way to medius; wing slender. | <i>antillanus</i> |
| Areola postica quite high, reaching one half way to medius. | 6 |
| 6—Stigma large, extending back one half way to radial sector. | <i>olitorius</i> |
| Stigma low, not extending back one half way to radial sector. | <i>brevihirtus</i> |

***Caecilius olitorius* sp. nov. (Fig. 15.)**

Head pale yellowish; ocelli connected by a dark spot, eyes of male less than diameter apart; antennae pale, with moderately long hair; mesonotum with anterior lobe and most of lateral lobes brown, behind pale; legs pale; wings pale yellowish, veins pale, stigma a little darker than elsewhere. In the fore wing the stigma is rather large, but hardly angulate at the turn; the fork of radial sector is not nearly as long as the stem; the forking of medius is much before the forking of radial sector; the area at base between medius and radial sector is only moderately widened; the areola postica is large and high, over one half way to the medius, the outer side sloping; the hairs on the veins and margin are moderately short.

Length of fore wing, 2.4 mm.

Two specimens from El Yunque, Puerto Rico, May, 3,000 ft. (Darlington). Type M. C. Z. 25280.

***Caecilius dardanus* sp. nov. (Fig. 6.)**

Head dull yellowish; eyes of male about a fourth more than diameter apart; ocelli on a rather large black spot; vertex with a median black streak, and a dark streak each side toward the eyes; antennae brownish, with rather long hair; the white hairs on head are also long. Mesonotum black, a pale spot each side in front, some pale on sides, and the mesoscutellum pale, all clothed with white hair; metanotum black, a median, pale, triangular spot at base; abdomen dark, also with white hair. Legs pale, the tarsi dark.

Fore wings with mostly brown veins; with numerous small spots, many faint; those at angle of forking of radial sector and of medius, and one just above the top of the areola postica, and at tip of the anal vein are almost black; those in end or base of cells and at the tip of veins are very much paler, those at base and tip of stigma are intermediate. Hinds wings unmarked, with dark veins. The fore wings are rather slender, all the veins have long stiff hairs; the stigma is long, rounded at turn; the fork of radial sector is as long as the stem except that the stem is much curved at base; the medius forks about opposite to forking of radial sector; the areola postica is large and high, the outer side sloping; the union of radial sector and medius is fully one half of the basal section of radial sector. In hind wings the fork of radial sector is much longer than the stem,

the upper branch nearly vertical, the outer part of medius is strongly sinuate.

Length of fore wings 3.5 mm.

One from Constanza to Valle Nuevo, Santo Domingo, August, 3 to 7,000 ft. (Darlington). Type M. C. Z. no. 25282.

***Caecilius alcinus* sp. nov. (Fig. 2.)**

Head yellowish brown; antennae pale yellowish, slightly darker toward tip; eyes of male large, less than a diameter apart; mesonotum brown, clothed with many fine white hairs; abdomen brown; legs rather long, pale yellowish, darker at tips of tibiae.

Wings hyaline; fore wings heavily marked with brown behind the medius, and outer half of basal part of wing, the basal part of area between radial sector and medius, and a band across stigma near its tip and reaching back to the radial sector; in the hind part of wing the areola postica is mostly clear and a small space near end of cubitus; hind wings unmarked.

In fore wings the stigma has a very long, slender basal part, outer edge convex; the fork of radial sector is shorter than the stem; the union of radial sector and medius is quite short, only one half as long as the basal section of the radial sector; the medius forks only a little way before the forking of the radial sector; the areola postica is large, fully one half way to the medius, and the outer side sloping.

In the hind wings the fork of radial sector is fully equal to the stem, the upper branch a little oblique to the margin; the medius beyond the union is very sinuous.

Length of fore wing 2.5 mm.

One male from Loma Rucilla and mountains north, Santo Domingo, June, 5 to 8,000 ft. (Darlington). Type M. C. Z. no. 25281.

***Caecilius calígonus* sp. nov. (Fig. 5.)**

Head and thorax reddish yellow; antennae and legs pale yellowish. Fore wings much marked with brown, larger portion of posterior part of wing brown; the areola postica, small upper part of posterior cells and some of the apical part of the space between radial sector and medius, also part of the basal portion just beyond the separation of radial sector and medius, a pale area below down to the areola postica, a small area near end of the anal vein are all pale. The upper part of wing is largely pale; a very dark streak over base

of radial sector, a narrow oblique band across middle of stigma, the apical part of stigma, and a broad area over the upper branch of the fork of radial sector, brown. In the basal part of wing are two very striking black areas, one along the posterior margin occupying most of the anal area, and an oblong black spot over the united part of the medius and cubitus, but not extending near base of wing; the area over the cubitus after the separation is also darker than the brown outer parts of wing.

In hind wing no marks, the veins are pale. In the fore wing the stigma is rounded at the turn, outer side convex, inner part very strongly concave, the main part of stigma is clothed with short, fine hairs. The fork of radial sector is not nearly as long as the stem, the areola postica is large and high, its basal side also quite high; the union of medius and radial sector is short, the veins are fine and have few hairs.

In the hind wings the fork of radial sector is as long as the stem, the upper branch short and running only a little obliquely to the front margin.

Length of fore wing 2.5 mm.

One from Constanza to Valle Nuevo, Santo Domingo, August, 3 to 7,000 ft. (Darlington). Type M. C. Z. no. 25283.

***Graphocaecilius achrysus* sp. nov. (Fig. 16.)**

Head pale; nasus black, with a median pale line, and each side with several oblique or curved pale lines; ocelli on a dark spot, and six or eight small dark spots each side and on vertex; antennae pale, banded with dark; mesonotum brown, a median pale line and a pale spot each side. Femora mostly black, tip pale; tibia with a long dark streak on basal part, and a shorter dark band somewhat before the tip, basitarsus partly dark. Head and thorax with rather long, erect bristles.

Wings hyaline; fore wings with broad veins and border, most of them beaded with dark; each apical cell has a small dark spot, dark spots at ends of the veins; stigma dark at tip and base, with a few small dark dots in posterior part from each of which arises a long bristle, and just below the angle of stigma is another such spot and bristle; veins with bristles from the dark spots; below stigma is a brown cloud reaching almost to radial sector; hind wings unmarked, with dark veins.

In fore wings the fork of radial sector is not nearly as long as the stem, the space between radial sector and medius is very wide

near base, the areola postica is large and high and subtriangular, the stigma is wide on basal part, and behind is almost angular at the turn. In hind wings the fork of radial sector is very short, and the upper branch runs almost vertically to the upper margin.

Length of fore wing 1.8 mm.

One from San Jose de las Matas, Santo Domingo, June, 1,000 to 2,000 ft., and a poor specimen from Ocho Rios, Jamaica, 20 to 24 August (both collected by Mr. Darlington). Type M. C. Z. no. 25287.

***Epipsocus icarus* sp. nov. (Fig. 1.)**

Face dull brown; vertex more yellowish, with some dark lines or marks each side; antennae yellowish; mesonotum dull yellowish brown; legs yellowish, a dark band on mid and hind tibiae some distance before tip.

Wings hyaline; in fore wings the veins are pale, but many beaded with dark; a pale brown to yellowish band around outer edge of wing, beginning at the lower branch of radial sector and including the areola postica, except a sub-basal hyaline spot; the basal section of radial sector, the joinings of most veins, and the ends of veins are distinctly dark brown; the stigma is dark in the apical part, the rest faintly yellowish; a brown spot behind stigma, and a streak between radial sector and medius, and a larger pale brown mark above and before the end of the anal vein; a black spot at end of anal vein and one before the base of stigma.

In hind wings some parts of the basal veins are dark, and the ends of veins on the outer margin.

In the female the eyes are fully two diameters apart, in the male less than one diameter.

In fore wings the stigma has a very long slender base, and behind at widest part is almost angular; both branches of radial sector plainly sinuate, and the first branch of the medius is forked at about middle; the areola postica is low and long, but elevated near the base. In hind wings the fork of radial sector is much shorter than the very long stem.

Length of fore wing 5 mm.

One from Constanza to Valle Nuevo, August, 3 to 7,000 ft., and two from Loma Rucilla, June, 5 to 8,000 ft., both Santo Domingo (Darlington). Type M. C. Z. no. 25284.

The generic position of this and *E. antillanus*, which also has the first branch of the medius forked, is uncertain. There is some affinity with *Euplocania*, particularly with *E. icarus*. I have a set of

specimens from Santa Catherina, Brazil, some true *Epipsocus*, others like *E. antillanus* and several with various odd modifications in one or both wings; I am inclined to keep all in *Epipsocus* for the present.

***Psylloneura aliena* sp. nov.** (Figs. 17, 22.)

Head pale yellowish, a reddish to brownish stripe each side from eye to mouth, passing through the base of the antenna, line from ocelli to vertex also marked; antennae pale, with scattered hairs; face with a few, rather long pale hairs; mesonotum pale brownish yellow, legs pale, unmarked. Wings hyaline, veins pale brown, no marks.

The fore wings a little more slender than in other species; fork of radial sector is not as long as the stem, the upper branch oblique; the forking of medius is almost as far back as that of the radial sector; the branch from radius to margin is oblique; the long cell on hind margin is as long as width of wing. In the hind wings the upper branch of the radial sector is plainly oblique.

Length of fore wing 2 mm.

Two from Soledad, near Cienfuegos, Cuba, 24 to 30 May (C. T. Parsons). Type M. C. Z. no. 25285. The genus is known from islands in the Pacific.

***Echmepteryx cubana* sp. nov.** (Fig. 20.)

Head pale dull yellowish, below ocelli with some rather long yellowish hairs, on front of vertex each side by the eye is a dark spot; palpi pale; antennae brownish; thorax faintly brown; abdomen pale; legs mostly pale, hind legs darker, especially the femora may be dark brown. Fore wings with two more or less distinct brown bands, the first about at the middle of wing, the second a little beyond, tip faintly dark; the membrane with many long yellowish hairs; front border beyond middle with many long, partly erect, mostly dark hairs; hind border beyond middle with a fringe of very long, mostly gray to brown hairs.

Wings very slender; fore wings much more slender than in *E. agilis* Pack., with a slender almost pointed tip; the middle cell about three times as long as broad, two branches from it above; at tip a forked branch; from below toward tip a branch which soon forks, the upper part forking again, and its upper part going to the wing-tip; from before the cell is a branch which soon forks; the anal area is large and punctate and the second anal obscure.

In hind wing the venation as in figure.

Length of fore wing 1.7 mm.

From Soledad, Santa Clara Province, Cuba, 9 to 15 June; 24 to 30 May, 17 July, and from Vinales, Cuba, 2 August; all taken by Mr. Parsons. Type M. C. Z. no. 25286.

Readily separated from *E. agilis* by the unmarked face, and by the more slender wings.

CHRYSOPIDAE

Chrysopa damiensis var. *jamaicensis* var. nov.

In general similar to the typical form, but the antennae (beyond basal joint) are plainly brownish, at least above; the stripe on basal joint of antenna is dark brown, not pale reddish; the red on side of pronotum extends back to end, not confined to anterior two thirds; the last two joints of palpi are black (only the last in *damiensis*); the wings have the gradates and practically all cross-veins black; three to four inner gradates, six outer, in parallel rows; the hair on veins is short as in typical form; divisory veinlet ends at or just beyond the cross-vein. Specimens from Jamaica; Kingston, 27 to 29 August (Darlington); Ocho Rios, 20 to 24 August (Darlington); and Trelawny (Miss Perkins). Type M. C. Z. no. 25288. I have seen *C. damiensis* only from Hispaniola and Puerto Rico, where it appears to be quite common.

Chrysopa domingensis sp. nov.

Generally yellowish green; a black line from eye down over edge of clypeus; palpi largely black; antennae wholly pale; pronotum with a broad, yellowish, median stripe, green on sides; no marks on thorax; abdomen more or less brown on sides, with a pale median stripe above; legs pale. Wings hyaline, veins green, gradates dark, other cross-veins dark at ends for a very short distance, so that all junctions of veins are dark. In hind wing only a few veins near front are darkened, the gradates wholly.

Face no broader than length of eye, vertex rounded; antennae not nearly equal wings; pronotum short, broader than long, narrowed in front, transverse furrow prominent; wings moderately broad, tips acute; in fore wing costal area broader than post-cubital, latter one half broader than cubital area; divisory veinlet ends much beyond the cross-vein, six cubital cross-veins beyond; ten to eleven radial cross-veins; the medius is not thickened at base of divisory

cell, the cubitus a little thickened along basal half of second cubital cell, and a short distance before; gradates well separated in each row, about six in each, the rows slightly divergent, the inner about as far from outer as the outer row from margin; hair on wing moderately long. In hind wing the gradates, four inner, five outer, also well separated, and the rows scarcely parallel.

Length of fore wing 12 mm.

From Constanza, 21 August; Constanza to Jarabacoa, August, 2 to 4,000 ft.; and San Jose de las Matas, June, 1 to 2,000 ft., all Santo Domingo (Darlington). Type M. C. Z. no. 25289.

Nodita ocampina sp. nov.

In general similar to *N. tarini* Navas, having pale antennae, with a broad stripe on the basal joint, the lateral margins of pronotum and an irregular mark above bases of fore wings reddish, the cross-veins of wings partly black, the gradates wholly dark. It differs in color in having a distinct red spot under each eye; the stripe on basal joint is reddish (dark brown in *tarini*); no dark spots on the abdomen above, by having more dark cross-veins, the cubitals wholly, and many of the post-cubitals dark (in *tarini* hardly any dark).

In structure it differs from *tarini* in that the inner gradate series is long, extending backward, so that it is nearly parallel to the radial sector (in *tarini* the inner series is very short), the basal part of this inner series is much nearer to the radial sector than to the outer row of gradates. It is larger than *tarini*, which is the smallest of the Antillean *Noditas*.

Length of fore wing 13 mm.

From Mt. Diego de Ocampo, July, 3 to 4,000 ft., Santo Domingo (Darlington). Type M. C. Z. 25290.

Leucochrysa navasi n. n.

Leucochrysa antennata Navas, 1921 from Cuba, is preoccupied by *Leucochrysa antennata* Bks. from Mexico, therefore I rename the Cuban species for him who did so much work on this family.

HEMEROBIIIDAE

Hemerobius domingensis sp. nov. (Figs. 4, 7.)

Face pale, dark spot beneath eyes, tips of palpi pale, antennae pale; pronotum pale, with dark stripe on each lateral margin, rest

of thorax pale; legs pale; abdomen yellowish brown. Fore wings pale, veins interrupted with dark dots, gradates wholly dark, a larger dark mark over the short connection of branch of medius and the cubitus, margin dotted with dark and pale; hind wings with the veins pale brown, the outer gradates darker. Fore wings more than twice as long as broad, scarcely pointed at tip, costal area rather broad, its greatest breadth is more than the space from last inner gradate to hind margin; three radial sectors, third forked three times, the cross-vein back to radius, very much nearer to second fork than to the third; inner gradates almost parallel to outer; no closed cell back of cubito-median cell; last to inner gradates interstitial or nearly so. The genitalia of male show from above a long, slender piece with an incurved sharp tip (in *cubanus* the tip is blunt).

Length of fore wing 6 mm., width 2.5 mm.

From Loma Rucilla and mountains north, 5 to 8,000 ft., June; Constanza to Valle Nuevo, 3 to 7,000 ft., August, and foothills Cordillera Central south of Santiago, June, all Santo Domingo (Darlington). Type M. C. Z. 25408.

***Hemerobius antigonus* sp. nov. (Fig. 3.)**

Head yellowish, a brown mark on cheeks, antennae pale yellowish; pronotum with a broad dark brown stripe on each side, leaving a median yellow stripe; rest of notum reddish brown on sides, yellowish in middle; abdomen black at base above, growing paler to the yellowish tip, mostly brown beneath; legs pale, unmarked.

Fore wings with the pale veins interrupted with brown dots or short streaks, but subcosta scarcely marked; gradates wholly dark, larger spots at origin of radial sector and still larger at the connection of cubitus and fork of medius; in hind wings the veins mostly pale, gradates but little darker. Fore wings over twice as long as broad, scarcely acute at tip, costal margin hardly broader than the space from last inner gradate to hind margin, gradates in parallel rows, the last inner gradate veinlet much beyond the next to last; a closed cell behind cubito-median cell; three radial sectors, the third forked four times, the first cross-vein back to radius is as near to the third fork as to the second.

Male genitalia show from above two curved heavy pieces, with curved sharp-pointed tips; from side a basal projection is seen whose tip curves inward.

Fore wings 7 mm. long, 2.6 mm. wide.

From Valle Nuevo, southeast of Constanza, 7,000 ft., August, and Loma Rucilla and mountains north, 5 to 8,000 ft., June; both Santo Domingo (Darlington). Type M. C. Z. no. 25409.

CALAMOCERATIDAE

Phylloicus iridescens sp. nov. (Fig. 12.)

Body black; face below the antennae pale yellow, with a tuft of black hair each side by the eye; palpi jet black; antennae dark near base, beyond becoming paler. Fore wings black, iridescent, especially toward base; with two narrow, pale yellowish bands, curved toward each other; one before middle, other beyond anastomosis, each formed of yellowish hair, no yellow in the membrane. In a certain view one sees a band of iridescent blue spots over the anastomosis, and another a little beyond the outer pale band, and large blue areas near base. Hind wings uniform blackish. Legs largely pale yellow, the tibiae more or less dark. Venation much like others; fork one reaches back on discal cell nearly width of cell; fork two acute at base, sometimes almost petiolate; fork three broadly angular at base; fork four reaches back almost to middle of median cell, latter as long as the discal.

Length of fore wing 20 to 22 mm.

From Constanza to Valle Nuevo, August, 3 to 7,000 ft.; Valle Nuevo, southeast of Constanza, August, 7,000 ft., and Loma Rucilla and mountains north, 5 to 8,000 ft., June, all Santo Domingo, (Darlington). Type M. C. Z. no. 25297.

The four known Antillean species can be separated as below:

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| 1—Wings yellowish brown, no pale marks; abdomen yellow. | <i>chalybeus</i> |
| Wings with yellowish bands. | 2 |
| 2—Abdomen black; the two curved bands formed of scales, no yellow in membrane. | <i>iridescens</i> |
| Abdomen mostly yellowish; the bands are in the membrane, as well as the pale hairs. | 3 |
| 3—Fore wings ten millimeters or less; outer band has a hump on inner margin near tip. | <i>cubanus</i> |
| Fore wings over ten millimeters; outer band has the inner edge evenly concave. | <i>superbus</i> |

Marília gracilis var. **nigrescens** var. nov.

Similar in many ways to *M. gracilis*, typical form; but the wings much darker, especially the hind wings, which have almost black hair and fringes; the fore wings have the dark patches larger and fewer

spots of white hair; the male genitalia appear to be the same, except that the penis is plainly more slender toward tip; size as in typical form.

From Valle Nuevo, southeast of Constanza, 7,000 ft., August, Santo Domingo (Darlington). Type M.C.Z. no. 25298.

HYDROPSYCHIDAE

Hydropsyche domíngensis sp. nov. (Figs. 32, 33, 34.)

Head with pale yellowish to gray hair, some each side above eye black; palpi pale; antennae pale, rather broadly annulate above with brown; thorax above with some similar yellowish hair; abdomen black, genital parts paler; legs pale, tarsi pale brown on basal half, tibiae somewhat brownish above. Wings with many brown spots, mostly near costa, along cubitus, or in anal area; hair brown and pale yellowish, much intermixed, but with many patches of yellowish, a larger one near end of anal vein, and a large dark spot over apical half of fork one, elsewhere much marmorate, some of the apical fringe black; hind wings gray, with pale gray fringes.

In fore wing the discal cell is about two and a half times as long as broad, fork one with a short pedicel, fork two almost one half way back on discal cell, fork three with short pedicel, fork four nearly as far before the cross-vein as fork three is beyond it, fork five reaches only a little basad of fork four.

The male genitalia have a broad, bilobed superior plate, tips of the lobes bent down; the claspers are short, the apical joint very short and broad and its outer apex somewhat prolonged; penis has a smooth tip, from above and below appearing divided into a lobe each side, no teeth nor spines.

Length of fore wings 10 mm.

From Constanza to Jarabacoa, 2 to 4,000 ft., August, and from Constanza to Valle Nuevo, 3 to 7,000 ft., August, Santo Domingo (Darlington). Type M. C. Z. no. 25291.

Smicridea completa sp. nov. (Fig. 25.)

Dark brown to black, head and thorax with some white hair; antennae pale, many joints annulate with brown; palpi pale brown; legs pale, tibiae darker. Fore wings clothed with black hair, a narrow band of white hair across the wing over the anastomosis, but little broader in front than elsewhere; fringe black; hind wings dark gray, the fringe almost black.

In the fore wings the discal cell is very slender and plainly more than one half the length of the median cell. Fork one has a very short pedicel; fork two very slender, especially toward base, hardly as far back as fork one; fork three also slender, about equal to fork two; fork four long and quite broad, reaching basad fully as far as fork five; the anastomosis forms a continuous line. The male genitalia have a broad superior plate broadly indented in front; the claspers very slender, the apical joint slender and curved; the ventral plate is broad and slightly emarginate in the middle; penis slender, with a rounded tip.

Length of fore wing 4.5 mm.

From Villa Altagracia, July, and Constanza, 3 to 4,000 ft., August, both Santo Domingo (Darlington coll.). Type M. C. Z. no. 25292.

Related to *S. comma*, but smaller, with darker, almost black wings; the white band reaching across wing and not extended outward on the costa as in *comma*; fork one is longer, and discal cell also proportionally longer. The shape of the superior plate of the male genitalia is very different, fig. 28 for *S. comma*, fig. 25 for *S. completa*.

***Polycentropus domingensis* sp. nov.** (Figs. 18, 19, 23.)

Head nearly black, with short, stiff black hair, palpi almost black, antennae yellowish, but more or less darkened, sometimes lower face and palpi pale; legs pale, tarsi often darker, mesonotum dark brown; pronotal lobes pale yellowish; abdomen dark above, pale beneath; wings gray; fore wings with much short black hair, and with many, usually rounded spots of yellow or golden hair, several in each apical cell, four larger, usually more elongate pale spots in costal area, outer fringe short and black; hind wings unmarked, but darker toward tips; in fore wing a hyaline whitish spot over end of median cell, over cross-vein from median cell to fork two, and one over base of median cell and back on the cross-vein.

In fore wing fork one is usually longer than its pedicel; fork two slightly indents the discal cell; fork three with a short pedicel; fork four reaching back as far as end of the median cell; fork five back almost to base of median cell. In hind wing fork one is rarely as long as pedicel, fork two three times as long as its pedicel.

The male genitalia show a pair of elongate, moderately broad ventral plates; superior (from above) somewhat pearshaped, with the

lower end projecting laterally in a stout curved point; intermediate pieces long, slender, and curved outward toward tip.

Length of fore wing 10 to 13 mm.

From Loma Rucilla, 5 to 10,000 ft., June, and Valle Nuevo, southeast of Constanza, about 7,000 ft., August, both Santo Domingo (Darlington). Type M. C. Z. no. 25293.

In one hind wing of one specimen the discal cell is plainly closed.

***Antillopsyche* gen. nov.**

A Polycentropid; spurs 3, 4, 4, median of front tibia very short; second joint of palpi short; fore wings with all five forks, third, fourth and fifth subequal, first with a pedicel; discal cell quite long, remote from the wing-tip, fork two being very much longer than the width of wing; in hind wing forks two, three, and five; discal cell open; costal margin from middle to one half way to tip concave. Venation somewhat like *Hyalopsyche*, but discal cell in hind wing not closed.

***Antillopsyche wrighti* sp. nov. (Figs. 13, 26, 29, 31.)**

Head black, clothed above with dense gray and yellow hair; palpi dark; antennae very pale; some dark hair on pronotal lobes, that on mesonotum mostly pale; legs pale brownish, often a pale spot at middle and tip of front tibiae, and also tip of basitarsus and second joint, last two joints wholly pale; abdomen brown above, slightly paler below.

Fore wings with a dark streak along costa, brown in fresh specimens, tending to red-brown in older ones; a pale spot before and beyond stigma; membrane with many fine gray hairs and much brown intermixed; a narrow median area largely pale; outer and hind margin alternately brown and whitish; anal area gray often with many small brown spots; hind wings gray, darker on costal tip. In fore wing fork one is about as long as pedicel, fork two reaches to discal cell, fork three fully one half as long as two, fork five large and reaches basad of fork two. The male genitalia have the superior lateral appendages yellow, the others nearly black; the superior plate is divided into two somewhat pear-shaped pieces; the superior lateral appendages are almost truncate at tip; from below there is a broad ventral plate very deeply indented in the middle, through which projects the smooth penis; seen from below the superior plate and appendages show four processes in a row.

Length of fore wing 5 mm.

Several labelled "Cuba, Ch. Wright" taken many years ago; two taken at Soledad, near Cienfuegos, 1 to 8 June (Parsons). Type M. C. Z. no. 25294.

HYDROPTILIDAE

Antíllotrichia gen. nov.

Related to *Melanotrichia*. Spurs 0, 4, 4, inner apical spur of hind tibia short; palpi with fifth joint longer than fourth, flexible, articulated, fourth joint much longer than the third; no ocelli. Fore wings broad to near tips. Costal margin does not slope downward toward tip as much as in many Hydroptilidae, the wing-tip being above the end of the medius. Forks two and four present, anastomosis much disjointed; in hind wing, which is fairly broad, the costa is swollen near middle; lower side of fork two goes to the tip, no fork one, fork five is rather long.

In one fore wing there is a trace of the end of fork five. Related to *Menalotrichia* by general venation, and palpi, differs from genotype in absence of fork one in hind wing, in shape of fore wing, etc. Nearer to *M. trilineata* Mosely of Mexico, but the hind wings broader, genitalia more slender, etc.

Genotype *A. cubana* n. sp.

Antíllotrichia cubana sp. nov. (Figs. 14, 27, 30, 37.)

Head dark, with pale hair, palpi pale, antennae very dark; legs pale, tips of tibiae and all, except white bases, of the tarsal joints black. Wings with black hair and black fringes, somewhat rubbed, but no trace of pale band or other marks. Parts of male genitalia very long and slender, resembling certain *Psychomyia* forms; the superior appendages long, upcurved, the apical third (from side) broader, and the lower side all along with very long, oblique hairs below, shorter, scattered hairs above; on venter is a large pale plate, with a notched tip; above it arises a very slender, up-curved piece, almost as long as the superior appendages, and somewhat incurved, these also hairy; from between them projects the extremely slender penis, with a somewhat spear-shaped point; the last dorsal segment has short, erect, black hair.

Length of fore wing 4 mm., width about .7 mm.

From Hanabanillo Falls, Trinidad Mts., Cuba, 30 April (Darlington). Type M. C. Z. no. 25295.

Antillotríchia haitiensis sp. nov. (Figs. 35, 36.)

Head black, with gray hair; maxillary palpi brown, labial palpi pale; antennae dark brown, paler toward tip; mesonotum dark on sides with a broad median paler stripe; pronotal lobes dark. Abdomen brown to black; legs pale, tarsal joints dark on apical half. Fore wings dark brown, a small patch of yellowish hair near end of anal vein, and in front over the anastomosis are three spots of yellow hair, tending to form a short band; posterior fringe with some pale hairs; hind wings gray, the posterior fringe black toward base.

Structure similar to *A. cubana*; palpi the same; in fore wing the second fork is much narrowed at base, and the lower side of fork four is plainly shorter than the pedicel; the upper branch from the discal cell appears to be double, or very broad. The hind wings are similar to *A. cubana*, but the costa is not as much swollen near middle, fork three is quite wide, and the wing is rather more slender.

The male genitalia are similar; the hair on last dorsal segment is longer; the hair below superior appendage not such a close row; the intermediate appendages rather thicker near tip, and with few long hairs; the penis is slender, but broadened toward the truncate tip; the ventral plate shows a deep, broadly rounded median emargination.

Length of fore wing 4 mm.

From Camp Perin, near 1,000 ft., October 8 to 27, Haiti (Darlington). Type M. C. Z. no. 25296.

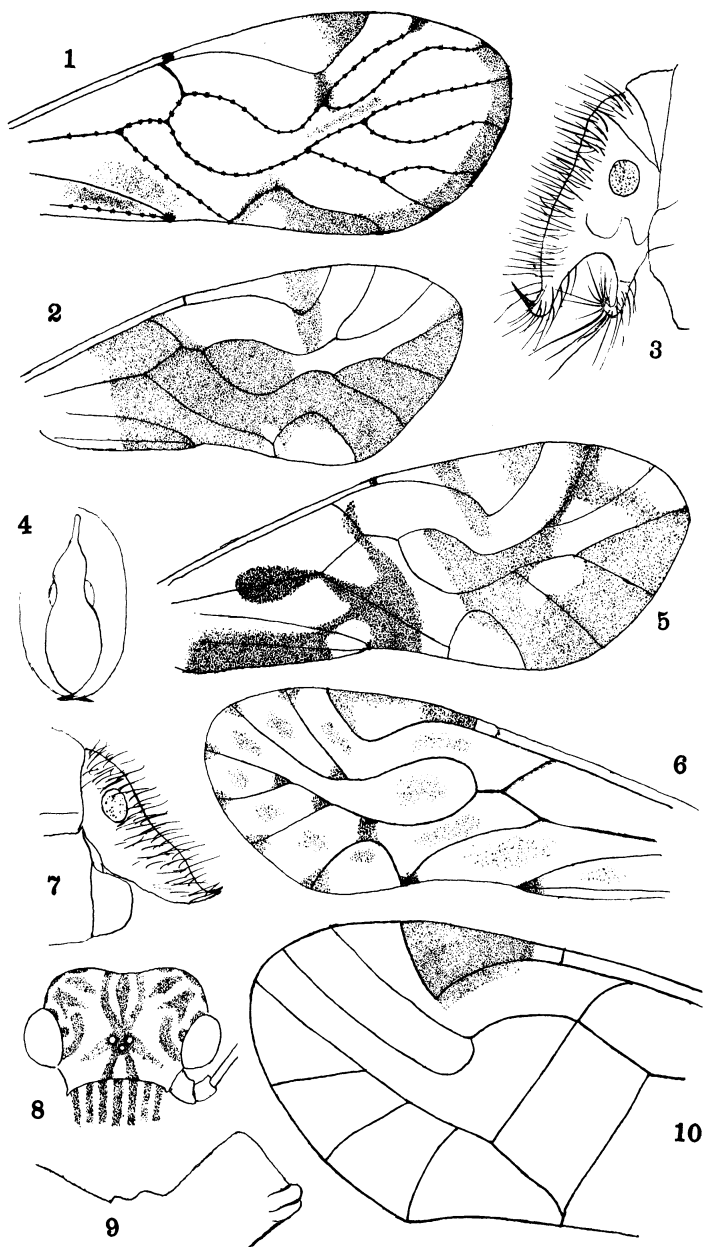


FIG. 1 - *Epipsocus icarus*, fore wing.
 " 2 - *Caccilius a'cinus*, fore wing.
 " 3 - *Hemerobius antigonus*, genitalia, side.
 " 4 - *Hemerobius domingensis*, appendages, behind.
 " 5 - *Caccilius caligonus*, fore wing.
 " 6 - *Caccilius dardanus*, fore wing.
 " 7 - *Hemerobius domingensis*, genitalia, side.
 " 8 - *Psocus cyllarus*, face.
 " 9 - *Myopsocus taurus*, outline of hind-margin of fore wing.
 " 10 - *Psocus oneitus*, part of fore wing.

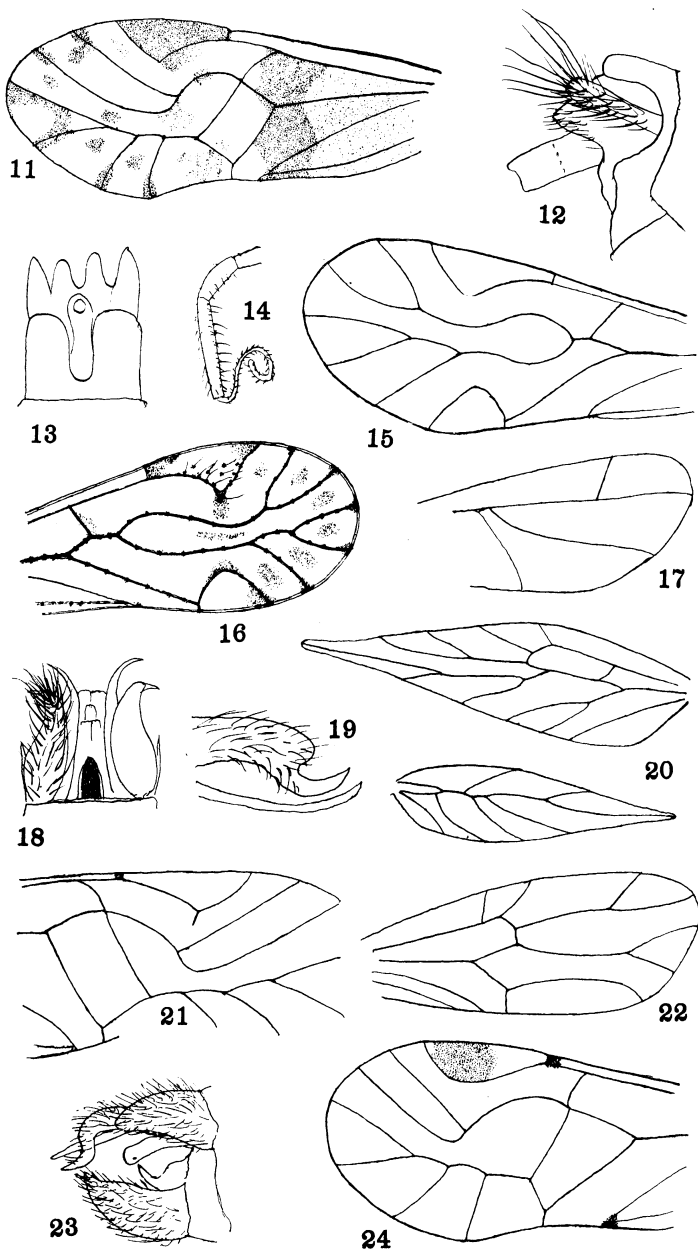


FIG. 11 — *Psocus cyllarus*, fore wing.
 „ 12 — *Phylloicus iridescent*, genitalia, side.
 „ 13 — *Antillopsyche wrighti*, genitalia, below.
 „ 14 — *Antillotruchia cubana*, maxillary palpus.
 „ 15 — *Caecilius olitorius*, fore wing.
 „ 16 — *Graphocaecilius achrysus*, fore wing.
 „ 17 — *Psylloneura aliena*, hind wing.
 „ 18 — *Polycentropus domingensis*, genitalia, above.
 „ 19 — *Polycentropus domingensis*, superior piece obliquely from above.
 „ 20 — *Echmepteria cubana*, fore and hind wing.
 „ 23 — *Polycentropus domingensis*, genitalia, side.
 „ 21 — *Copostigma laconia*, part of fore wing.
 „ 22 — *Psylloneura aliena*, fore wing.
 „ 24 — *Psocus annellus*, fore wing.

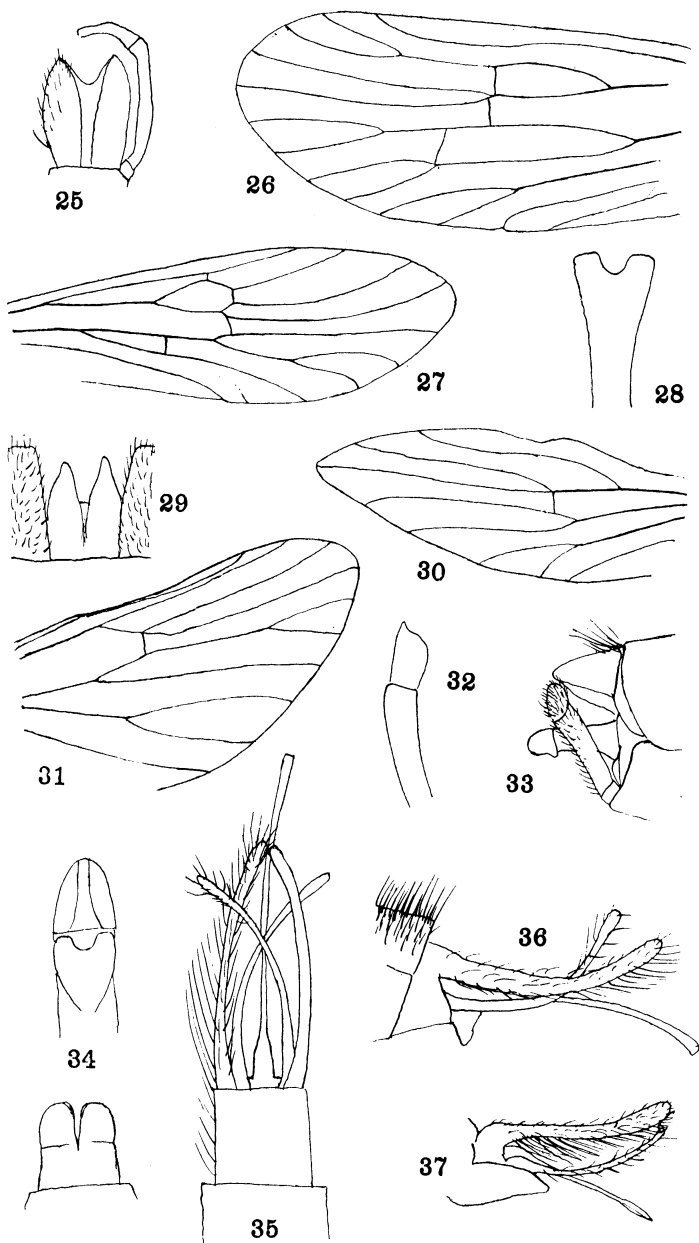


FIG. 25 - *Smicridea completa*, superior plate.
 " 26 - *Antillopsyche wrighti*, fore wing.
 " 27 - *Antillotrichia cubana*, fore wing.
 " 28 - *Smicridea comma*, superior plate.
 " 29 - *Antillopsyche wrighti*, superior appendages.
 " 30 - *Antillotrichia cubana*, hind wing.
 " 31 - *Antillopsyche wrighti*, hind wing.
 " 32 - *Hydropsyche domingensis*, clasper.
 " 33 - *Hydropsyche domingensis*, genitalia, side.
 " 34 - *Hydropsyche domingensis* above, penis from below; below, superior plate.
 " 35 - *Antillotrichia haitiensis*, genitalia, above.
 " 36 - *Antillotrichia haitiensis*, genitalia, side.
 " 37 - *Antillotrichia cubana*, genitalia, side.